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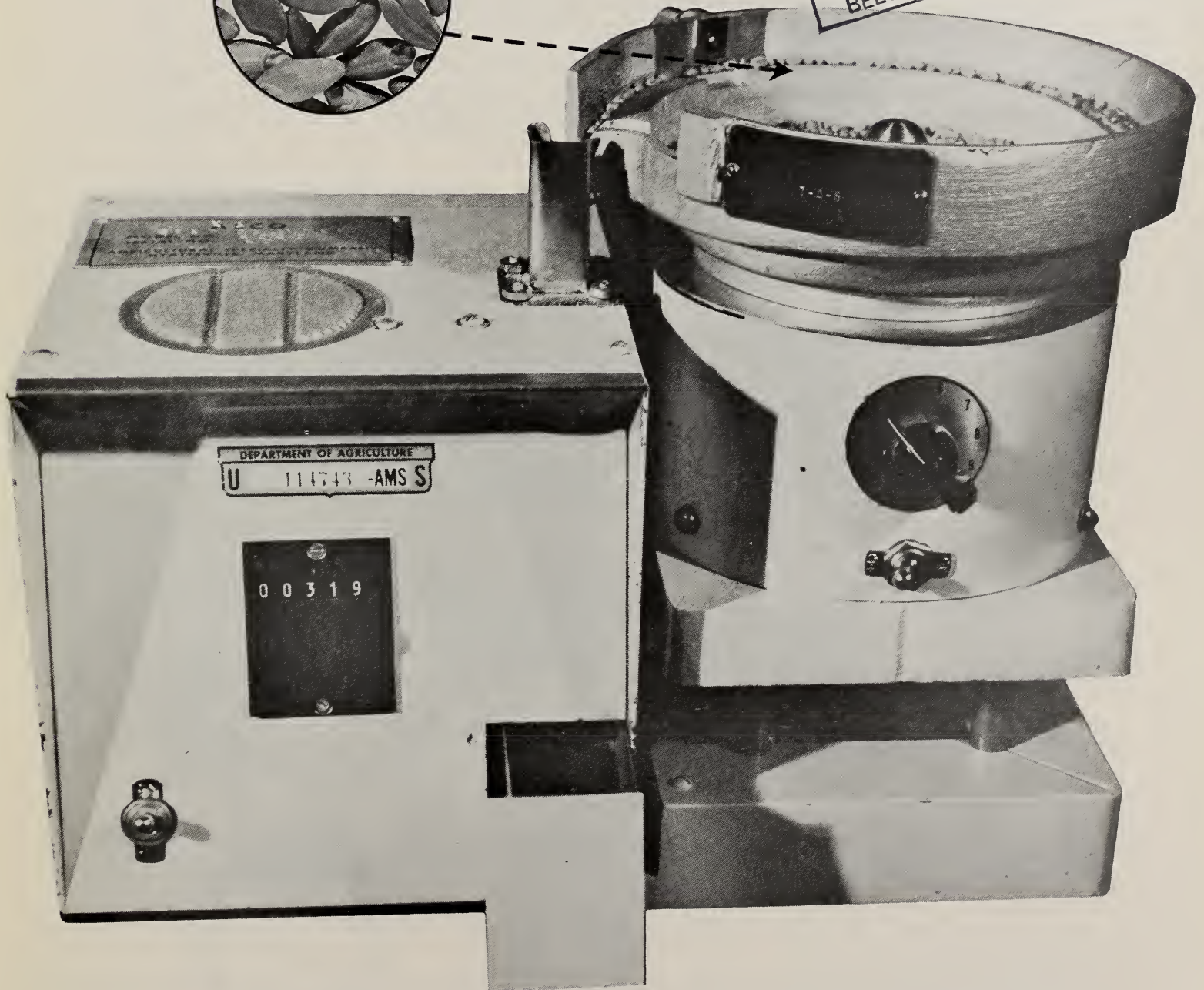
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NOVEMBER 1963

agricultural marketing



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ELECTRONIC SEED COUNTER PAGE 7



Volume 8, Number 11

ORVILLE L. FREEMAN
Secretary of Agriculture

S. R. SMITH, Administrator,
Agricultural Marketing Service

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November 1963

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Cover page

Nearly two years ago researchers in USDA's Agricultural Marketing Service developed the electronic seed counter which eliminated the tedious task of counting seeds by hand, enabling inspectors and graders to count twice as many seeds than was formerly possible.

Though originally designed to count peanuts, it could also count a variety of beans and other seeds. Researchers are now using it experimentally to bring about a greater degree of accuracy in one phase of wheat grading: they recently found they could get a more accurate estimate of flour yield by counting the number of kernels in a fixed weight of wheat than by using the test weight of a bushel of wheat. If further tests prove good, the number-of-kernels test may be the test of the future in evaluating the farmer's wheat. See story page 7.

Editor, MILTON HOFFMAN
Assistant Editor, JAMES A. HORTON

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"Carrots From Texas Invade British Market"

By W. A. McDonald

Columnist

Irish Press

Dublin, Ireland

TEXAS carrots are, of course, the biggest and longest in the whole wide world, but how it is economically possible—even for superefficient American businessmen—to export them to Britain at a profit is hard for us to believe.

But there it is: in the first two months of this year Texas-grown carrots to the value of 300,000 pounds sterling (\$840,000) were sold on the British market. And if anything can shake us up in this country (Ireland) to the realization of the opportunities we are missing by virtually ignoring the cross-Channel vegetable market, this should do it!

London's Covent Garden Market alone handles some 100 million pounds sterling worth of vegetables, fruit and flowers every year. Two-thirds of this amount is imported. And a considerable proportion consists of types of produce which we can certainly grow in Ireland—most definitely we can produce carrots as succulent and sweet as any other country.

There are a number of lessons we can learn from the story of the Texas carrots, apart from the obvious and shaming one of our missed opportunities. In the first place, the service and packaging of the carrots was of such a quality that Covent Garden dealers were delighted. And they promptly offered a premium price for them.

Although they had to bear a nine-day rail journey and a ten-day sea voyage, the carrots arrived in perfect condition. They had been packed in dry ice. They were perfectly clean and exactly graded; each one was practically a foot long

and uniform in shape. (Editor's note: The Texas carrot industry adopted a size regulation under the Federal marketing order requiring a minimum length of six inches.)

They came in bulk 50 lb. or 56 lb. bags and also in 1 lb. prepacks (in 40

at 38 shillings (\$5.32) per bag which is about 10 shillings (\$1.40) more than was paid for homegrown supplies.

What particularly endeared the Texas products to the salesmen was the fact that every bag or package was generously overweight.

Early in 1963, carrots from the Rio Grande Valley of Texas were being shipped in volume to markets in Great Britain for the first time. These high-quality products were packed under quality regulations designed by the growers to make their carrots more attractive to buyers. All carrots shipped had to meet these high merchandising standards set by the growers' committee, under the marketing agreement and order program administered by the Agricultural Marketing Service of the U.S. Department of Agriculture. The following column, from the June 6 issue of the Irish Press, Dublin, Ireland, is both a commentary on the impact these Texas carrots made on the British market and a testimonial to the fact that high-quality fruits and vegetables win friends—and markets—wherever they go.

lb. nets). A buildup of shipments ensured that supplies appeared regularly on the market.

True, there was a temporary shortage of English carrots this year, but American market intelligence men investigated the possibilities and recommended that an experimental shipment should be made. Probably the U.S. exporters lost money on the first effort because of the high freight charges, but they reckoned—and accurately—that their goods would soon be outselling all competitors.

Due to the shortage, the usual import duty of \$2.80 per ton was waived. Covent Garden salesmen rapidly learned to appreciate the American product, and within weeks they were glad to offer prices well above the normal rates. At times the Texas carrots were quoted

A commission agent explained that a 50 lb. bag could contain anything up to 60 lbs—certainly never less than the stated weight of the contents. Each 1-lb package was more likely to weigh at least two ounces more.

"Our own people," he added, "are always a bit inclined to give under weight. The buyers know this and they adjust their prices accordingly."

By their excellent presentation and service the Americans have certainly shaken up the British producers—and have given us an object lesson in marketing.

Probably the trade will not be maintained as local supplies become more plentiful and prices lower, but in one single week last month 35,000 bags of Texas carrots were handled by one Covent Garden trader.

MECHANIZATION CUTS COST OF SLAUGHTERING CATTLE

By James E. Grunig

STEERS on the hoof and meat on the table—they're the familiar beginning and end products of the beef industry. A lot that happens in between is not familiar to consumers and, perhaps, not to some cattlemen either, but the marketing process between the grower and the consumer is important in determining the price of beef. To reduce the cost of turning a steer into a steak, marketing researchers in the U.S. Department of Agriculture's Agricultural Marketing Service recently recommended two slaughtering systems for the Nation's 3,000 meat packing plants. They found that a plant annually handling 50,000 head of cattle could save as much as \$13,000 a year by using mechanized rail systems on the killing-floor instead of the traditional bed system.

These savings are possible in plants operating at a killing rate of 24 head per hour, with the dressed weight of carcasses at 500-700 pounds. With the efficient layouts designed by marketing researchers, a plant can increase its capacity to 35 head per hour—with no increase in the conventional amount of floor space.

Packers have traditionally performed killing floor operations using a "bed" system, where cattle carcasses are manually pushed between work areas on overhead rails. In this system, the carcasses must be lowered to beds on

the floor for some of the major work. In the two newer systems, carcasses stay on the rails through all the killing floor work. Carcasses are lowered from the rail automatically so the workers can easily reach them, or the workers are raised to the level of the carcasses by hydraulic platforms. The carcasses are moved by gravity or powered drive, and the work can be done in less space. Most important, the more mechanized systems have lower operating costs and a higher production rate per man-hour.

Only 12 workers were needed with each of the new systems, compared to 16 for the bed system. It took about 59.5 man-hours per hundred head of cattle with the standard operation, but only a little over 46 man-hours with the more mechanized procedures. This is an increase in labor efficiency of almost 25 percent.

In the more mechanized of the two systems recommended by marketing researchers, a power-driven chain carries the carcasses along the rail through the operations on the killing floor. A timing device controls the power drive so the carcasses stop at each work area for only a certain length of time. The powered system has six hydraulic platforms in comparison to three in the gravity system and one in the bed system.

The powered system gave the highest production rate—2.17 carcasses per man-hour—followed closely by the gravity method, with 2.14 carcasses per

man-hour. The traditional bed system trailed with only 1.68 carcasses per man-hour. With the bed system, there are over 9 man-hours of unproductive labor per 100 cattle; but there are fewer than 5 man-hours with the gravity system and only about 3½ with the powered-on-the-rail system.

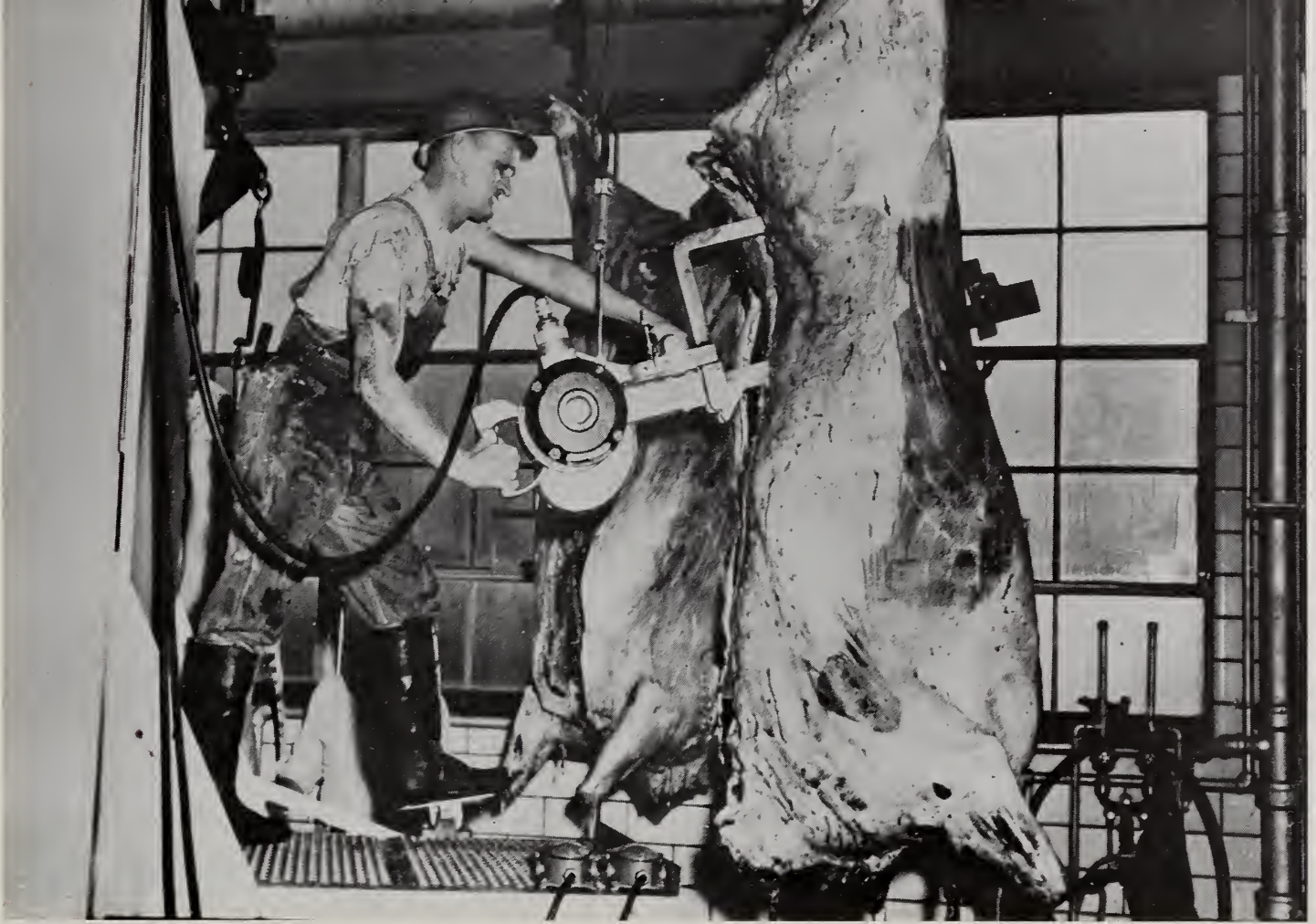
Equipment costs for the gravity and powered systems are higher than they are for the bed system. However, total operating costs are much lower for the two mechanized systems and they take less floor space. In the long run, the researchers say, the powered system costs the operator about the same as the gravity system.

The study was conducted by Donald R. Hammons, an AMS industrial engineer, in 14 slaughtering plants in Colorado, Kansas, Nebraska, and Texas. The Texas Agricultural Experiment Station cooperated in the study.

Such marketing research can help consumers to get more meat for their money and producers to get more money for their livestock.

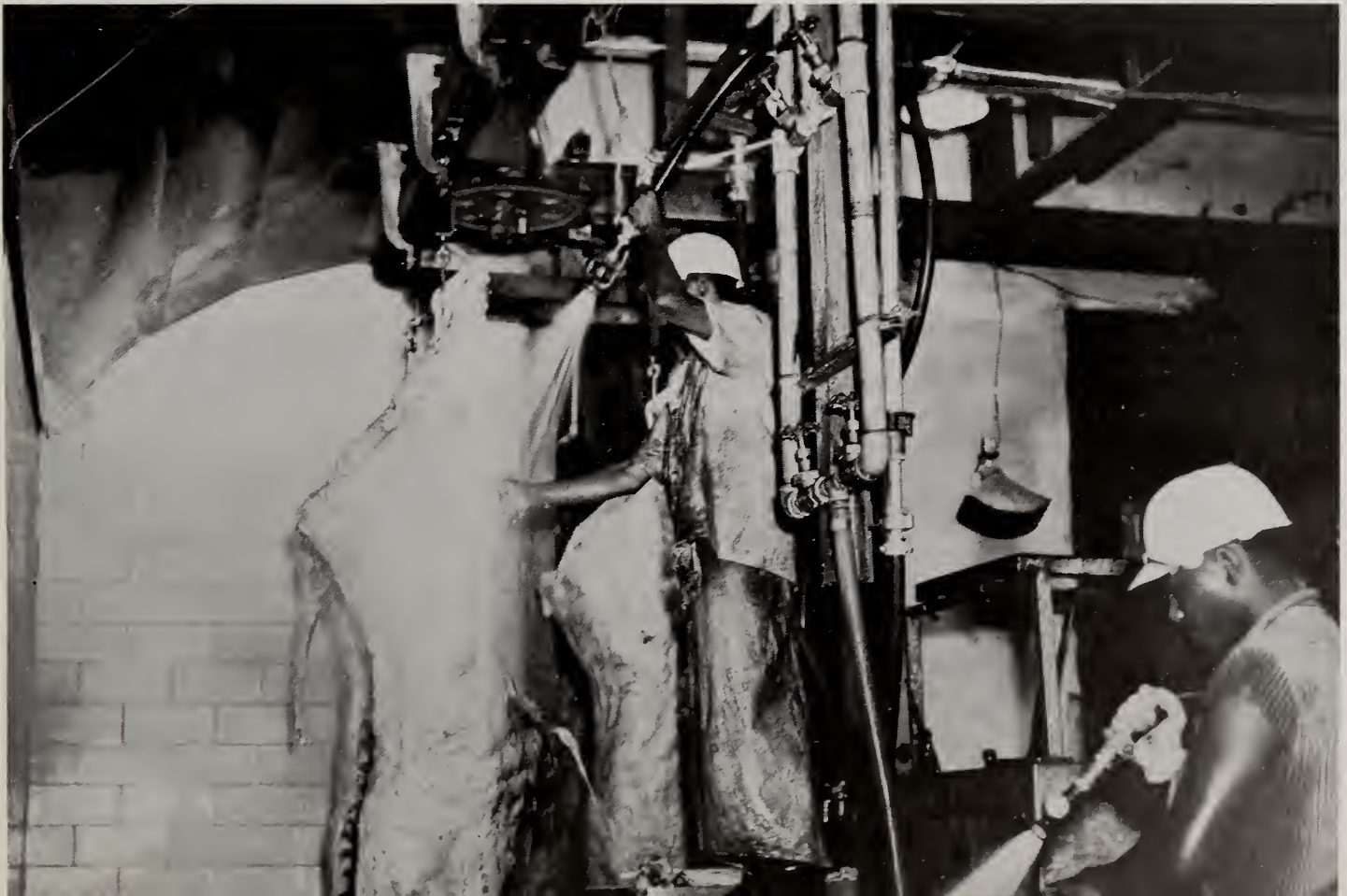
A marketing research report containing more information and suggested layouts for all these systems will be available early next year. It will be entitled "Cattle Killing Systems and Layouts."

(The author is a senior in agricultural journalism at Iowa State University. He was a student assistant in the Marketing Information Division, AMS, when this article was written.)



This hydraulic platform above is used in all three slaughtering systems recommended by AMS researchers. However, additional platforms are used in more mechanized operations, whereas only one is used in the traditional bed system.

Below, a slaughterhouse worker washes dressed carcasses from a hydraulic platform, one of several used to make slaughtering more efficient in mechanized killing floor systems. The systems could save some plants \$13,000 a year.



CHEMICALS PROVE POOR ON PREPACKAGED CAULIFLOWER

Treatment Before Cooling

Does Not Improve

Appearance or Shelf Life

MARKETING researchers in the U.S. Department of Agriculture's Agricultural Marketing Service recently found no improvement in appearance or shelf life could be gained by treating prepackaged cauliflower with any one of several chemicals approved for food use. In earlier tests, such treatment had improved the shelf appearance of sliced parsnips, cole slaw, and prepeeled potatoes.

AMS researchers previously proved cauliflower could be successfully prepackaged and vacuum cooled, but receivers and grower-packers often found discoloration and decay among commercial shipments of trimmed and wrapped cauliflower. So, they asked AMS researchers to find out whether chemical treatment before vacuum cooling could maintain a fresh appearance over a holding period.

The researchers tested sodium hypochlorite, sodium acid sulfite, a commercial sulfite, and acetic acid. Heads dipped in water and dry heads were used as controls in the 2-week test.

Chemical treatment didn't improve appearance or shelf-life, and sodium acid sulfite and acetic acid even visibly pitted the curds and discolored the basal leaves of the cauliflower heads. This discoloration was most apparent in the bruised areas.

Additional information on these findings may be obtained by writing to the

Marketing Information Division, Agricultural Marketing Service, USDA, Washington, D. C. 20250. Ask for

AMS-506, "Effects of Chemical Treatment on Quality of Prepackaged Vacuum-Cooled Cauliflower."

\$18.6 Million for Food Stamp Families

THE Agricultural Marketing Service of the U.S. Department of Agriculture supplied more than \$18.6 million in additional food purchasing power to low-income families participating in the Pilot Food Stamp Program during the year ending June 30, 1963.

Participation reached a peak of 359,086 persons near the end of the fiscal year, when virtually all of the scheduled areas were operating. As of June 30, 42 areas were in the stamp program, 34 of them having opened since July 1, 1962. Grays Harbor County, Washington, the newest area, began operating in September 1963.

During fiscal 1963, participating families paid a total of more than \$31 million for food stamp coupons, receiving in return coupons valued at close to \$50 million. On the average, the Federal "bonus" continued to be 37 cents out of each dollar's worth of coupons spent for food at authorized retail stores, with recipients contributing 63 cents.

Under the food stamp plan, eligible families certified by local public welfare agencies as in need of food assistance pay an amount for food coupons that will maintain their normal level of food expenditure, based on family size and income. In return, participants receive coupons of greater value to enable them to buy additional food.

Coupons are used to buy any food—except a few imported items—out of regular commercial supplies at retail outlets.

According to a food consumption study in two of the eight original pilot areas, that began operating more than two years ago, families made significant increases in food purchases and total value of food eaten. Meat, poultry, fish, milk, eggs, fruits and vegetables, accounted for more than 80 percent of the gains in the value of foods eaten.



Electronic seed counter eliminates tedious, time-consuming chore of counting seeds or grain by hand for grading, inspection, or other purposes. It is portable and can count from 250 to 750 seeds a minute, depending on size and uniformity.



A divider, used to subdivide large samples of grain into equal-weight portions. It has two 18-compartment units.

Electronic Seed Counter Predicts Flour Yield

AN electronic seed counter, developed by marketing researchers in the U.S. Department of Agriculture's Agricultural Marketing Service nearly two years ago, now is being used experimentally to make one phase of wheat grading more accurate.

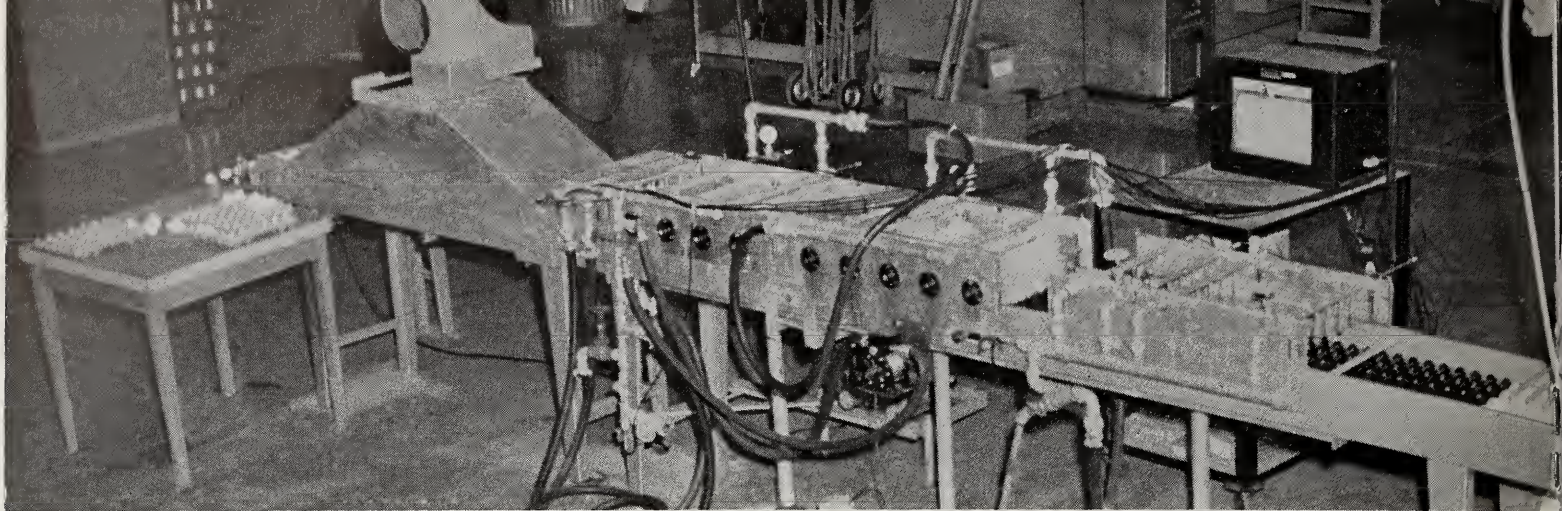
Researchers recently found they could get a more accurate estimate of flour yield by counting the number of kernels in a fixed weight of wheat than by using the test weight of a bushel of wheat. The test weight is recognized as only a rough measure of predicting flour yield.

Researchers previously used vacuum-counting plates to count 1,000 seeds. This method was tedious and time consuming; however, the new electronic counter overcomes this difficulty. The counter previously was described in the May 1962 issue of *Agricultural Marketing*.

The main body of the seed counter is a vibrating bowl with spiraling grooves along the sides. The vibrating seeds "climb" the spiraling grooves until they fall down a chute, cutting an electronic beam which counts them as they pass.

The researchers recommend weighing 30 grams of wheat (about an ounce) and then counting the number of kernels in that sample rather than counting exactly a thousand kernels. Then, all of the kernels in the bowl are used, and none is selected before the others. Also, the grader doesn't have to empty the bowl after each test. Commercial equipment is available to subdivide a large sample into equal weight portions.

It is expected that eventually the weight-per-bushel factor in the wheat standards will be replaced by the number-of-kernels-per-unit-weight (or some other quick test, depending upon further research) as a more accurate evaluation of the farmer's wheat.



On the Horizon

NEW EGG CLEANING EQ

By John A. Hamann

AUTOMATIC handling of eggs and other improvements in mechanizing the operation of egg packing plants during the past 10 years have afforded operators their greatest opportunities for cutting costs and increasing efficiency. Such improvements have had a continuing and important role in keeping egg prices at a reasonable level for consumers and in promoting greater sales.

New equipment being developed for wet-cleaning eggs now promises to help solve one of the biggest remaining problems confronting operators who want to improve their efficiency in handling eggs. Breakage, spoilage, and rehandling costs will be reduced if current

A roller-type conveyor carries eggs through cleaner. Here they are loaded onto conveyor from the case by Dr. Phoebe Starr of the University of California, using a multi-egg vacuum lifter that handles 36 eggs at a time.



tests of the new egg cleaner measure up to expectations.

The equipment was developed by the University of California in cooperation with marketing researchers in the U.S. Department of Agriculture's Agricultural Marketing Service. AMS researchers will test the equipment in a typical commercial egg grading and packing plant after the university completes laboratory tests, now in progress.

The new egg cleaner may have an important influence on the equipment offered by manufacturers in the future. It's expected to take up much less room than the space-consuming equipment now used in an egg grading and packing line. Even more important than its outward appearance will be its improvement in control of quality by minimizing spoilage and breakage while maximizing cleanliness.

Tests recently completed by AMS marketing researchers show that there are more problems inherent in wet-washing eggs than present equipment can always cope with. Wide variations have been found in the effectiveness of various commercial cleaners. The researchers hope to overcome these problems in their experimental model.

Studies are being made of different designs and of different procedures of spray-washing, and brushing eggs, in the hope of overcoming excessive breakage and of improving the thoroughness of the cleaning operation. Removal of dried dirt adhering to eggs will be easier and will help improve the thoroughness of cleaning procedures with incorporation of a wetting area in the new equipment's design at a location ahead of the washing area.

The experimental equipment will also provide for more thorough drying of the egg shell before the eggs are packed; this will help hold down the risk of subsequent contamination and spoilage.

Tests have confirmed that spoilage is also more of a danger as the temperature of the wash water drops and approaches the temperature of the eggs. To counter these tendencies in egg and water temperatures, the new equipment will automatically hold the water temperature at a consistently safe, higher level than that of the eggs. The researchers found spoilage was minimized when eggs were kept at 55° F. instead of being permitted to rise to a temperature of 75° F.

To keep bacteria from accumulating in the wash water and increasing the chances of subsequent spoilage, the new cleaner will provide for a continuous flow of fresh water. Facilities for detecting and removing trace quantities of iron in the wash water (a cause of spoilage in washed eggs) will be provided in the new cleaner.

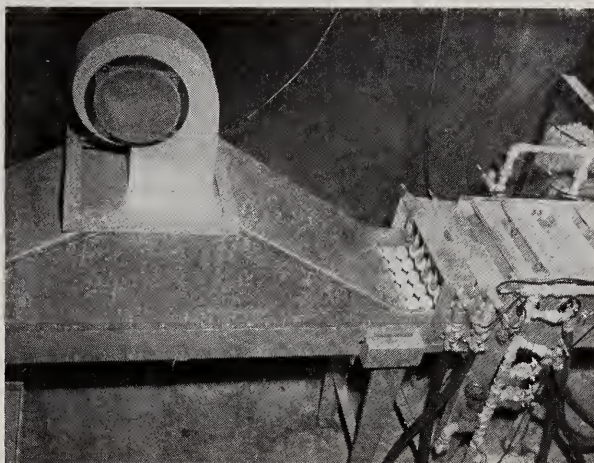
The various components and techniques to be incorporated in the experimental cleaner have never before been successfully used in one piece of equipment. Only the highlights of current tests and major features of the new cleaner have been presented in this article, because the research is not complete. If the equipment meets the requirements for commercial use, specifications and other details will be published for use by those interested, under provisions of a public patent.

(The author is a member of the Transportation and Facilities Research Division, AMS.)

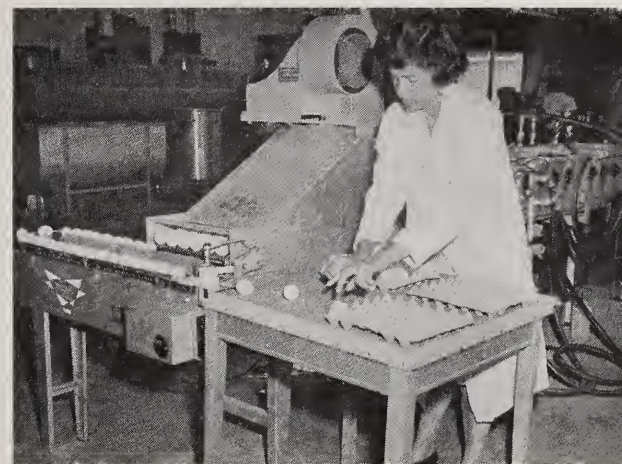


Egg cleaner, now being tested in a University of California lab, takes less space than commercial models now in use, and may reduce the number of breakage and spoilage problems.

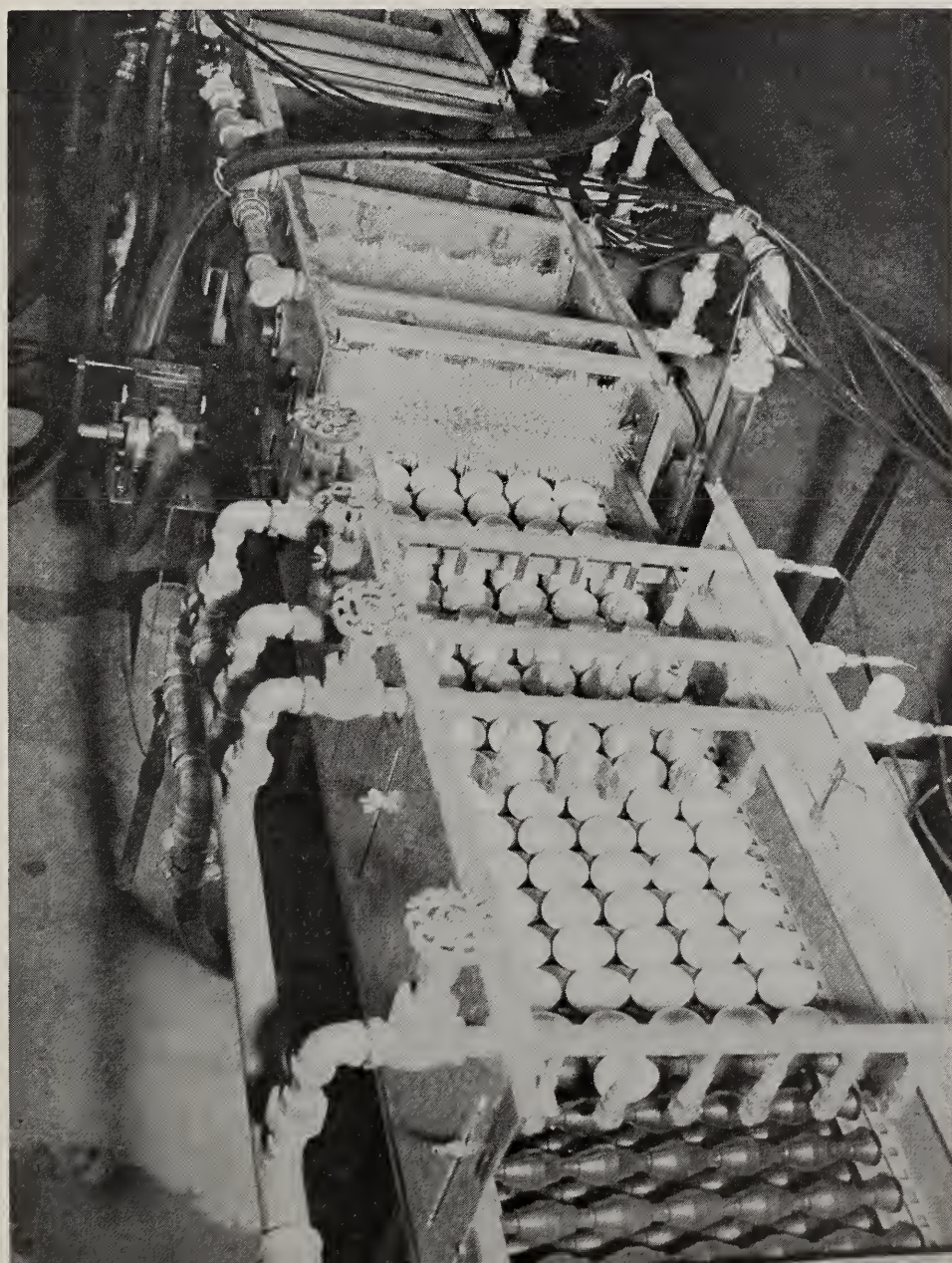
Eggs emerging from the washing-brushing operation pass under hood where blower, on top, forces air stream over eggs to give them spoilage-preventing drying.



After drying, the eggs are moved to a conveyor that turns them at a right angle for packing, either mechanically or by hand, as it is done here.



EQUIPMENT



Cover has been removed from egg cleaner to show eggs moving under hot water nozzles and abrasive bristle brushes. The wash water can be maintained at a consistently higher temperature than that of the eggs to reduce spoilage. The cleaner processes 20 cases an hour.

Things to Remember

"Is it safe to wet-clean eggs?" Few questions are more frequently asked by egg handlers. Spoilage is a risk present whether eggs are wet-cleaned or dry-cleaned. But these risks can be minimized in wet-cleaning by taking these precautions:

1. Wash only cool eggs and maintain wash water at a temperature that is at least 20° higher than that of the eggs.
2. Do not immerse eggs in wash solution for more than 5 minutes.
3. Avoid use of wash water containing trace quantities of iron.
4. Do not try to clean excessively dirty eggs.
5. Do not re-use wash water.
6. Use odorless cleaning materials.
7. Use a sanitizing rinse.
8. Drain eggs completely dry before packing.

Livestock Producers—

KNOW YOUR BUYERS!

EVERYONE recognizes that the days of bartering a couple of cows for a wagon, or a hog or lamb for a sack or two of flour, are mere symbols of bygone generations of marketing. Likewise, it is well known that in today's modern agriculture every producer of livestock must sell his animals as advantageously as possible to remain in business and make a living.

Yet it's as true today as it was in the days of bartering that a producer is more assured of getting the best deal when he sells his livestock to a reputable buyer.

"Knowing your buyer is as important to the livestock producer as it is to any other businessman," Donald A. Campbell, Director of AMS's Packers and Stockyards Division, says.

In the following paragraphs, Mr. Campbell supplies answers to some of the questions most often asked about how the Packers and Stockyards Act protects the producer, and what precautions should be taken by a producer to avoid being "taken in" by shysters and manipulators. Here are his comments.

QUESTION: What's USDA's authority for providing livestock producers with protection against "cheaters" in livestock marketing?

ANSWER: Our Division of the Agricultural Marketing Service administers the Packers and Stockyards Act. This Act—a 42-year-old Federal statute—safeguards competitive marketing and fair business practices in the livestock, poultry, and meat marketing industries.

QUESTION: What protections does the Act afford producers?

ANSWER: There are several general areas in which the Act protects the individual producer. These include: protections against unfair, discriminatory, and monopolistic buying practices; assurance of adequate marketing facilities and services; honest scales and weighing practices; financial protections to assure payment; and reparations proceedings to recover losses resulting from negligence or unfair practices.

QUESTION: At what markets do these protections apply?

ANSWER: Every producer has several outlets through which he can market his livestock. He may sell direct from his farm, through a country buying station, or at either a posted auction market or terminal stockyard. The P&S Act has jurisdiction over all livestock transactions that take place in the normal flow of commerce. Therefore, the

producer is protected at any of these market outlets, with two limitations. First, the Act does not provide for reparations when producers sell to packers; and second, there are no bonding requirements under the Act for packers.

QUESTION: What do you mean when you speak of a "posted" market?

ANSWER: A "posted" market is a terminal stockyard or auction market which has been determined to be operating in interstate commerce and, therefore, comes under the jurisdiction of the Act. Notices that a market is subject to the Act are posted in three conspicuous places in the market area. This lets everyone trading there know that the P&S rules of fair play must be followed.

QUESTION: What buyers does a producer sell his livestock to in these various markets?

ANSWER: There are principally three kinds of "registered" buyers who operate at these livestock markets. There is the order buyer or commission man, who purchases livestock strictly on a commission basis for another party. Secondly, there is the livestock dealer, who purchases livestock for his own account for later resale. The dealer is speculating that he can sell the animals for more money than he paid. Producers may also sell directly to a packer buyer, who is an employee of

a packing company and is registered to buy stock for slaughter purposes only. Of course, a producer may also sell his livestock to a fellow farmer or feed-lot operator.

QUESTION: What do you mean by a "registered" buyer?

ANSWER: All livestock dealers and commission men who operate in interstate commerce—regardless of whether they operate at a posted market or in the country—are subject to the registration and bonding provisions of the Act. Packers and their employed buyers are not required to be bonded under the Act, but the buyers must be registered with the Department.

QUESTION: Does a producer have to register and obtain bond if he wants to buy cattle to feed or restock?

ANSWER: No, a producer is not required to be registered or bonded under the P&S Act.

QUESTION: Are there any restrictions on the producer as to where and how he sells his livestock?

ANSWER: No, the method of selling livestock is left entirely up to the judgment of the individual producer. He must determine for himself the outlet and method which will net him the most money for his livestock.

QUESTION: Are there any pitfalls in this marketing procedure of which the livestock producer should be wary?

ANSWER: Definitely yes. The producer has the prime responsibility when selling his livestock to watch out for insolvent buyers and bad check artists. He must be particularly careful when selling to an unknown buyer.

QUESTION: What is the difference between an insolvent buyer and a bad check artist? And what can a producer do to protect himself against them?

ANSWER: An insolvent buyer is one who owes more money than he is able to pay. A bad check artist is a confidence man who has no intentions of paying for the livestock. Of course, the end result may be the same in both cases—no payment for the producer. However, in both cases, the best protection the producer has is to know the person to whom he is selling, and to make certain that the buyer is in good financial condition.

QUESTION: Doesn't the surety bond mean that payment for livestock is guaranteed?

ANSWER: Not entirely. Some buyers operate illegally without a bond. Even if a buyer is bonded, that still is no unconditional guarantee that the producer will get his money. Most buyers carry only minimum bonds of \$5,-

000 to \$10,000 to cover all their purchases. A bond merely lessens the risk that the seller takes when selling his livestock—it cannot cover all transactions by an individual whose financial condition is unsound.

QUESTION: What precautions should the individual producer take to guard against being caught by dishonest or financially-unsound buyers?

ANSWER: He should *know his buyer*. This is his responsibility. He can't delegate it to anyone. A producer can

easily check on any buyer, and he should do so if he does not know the man. This can be done by checking with the individual's bank. I can't stress strongly enough the importance of knowing the man with whom you are doing business. The old adage about closing the barn door after the horse is gone is very fitting. A producer should check on any unknown buyer *before* doing business—if he waits until after the sale is completed, it may be too late.

New Meat Buying Specifications

THE U.S. Department of Agriculture issued recently its "Institutional Meat Purchase Specifications for Cured or Cured and Smoked and Fully-Cooked Pork Products—Series 500," the latest addition to its approved series of large-scale meat buying specifications.

According to officials of USDA's Agricultural Marketing Service, the new series is designed to aid institutional buyers in purchasing processed pork products. These standardized "Institutional Meat Purchase Specifications" and "The General Requirements" for using them, developed by the Livestock Division of AMS have been requested both by meat suppliers and quantity buyers.

The specifications are for use in connection with an Acceptance Service conducted by the Meat Grading Branch of the Livestock Division. They bring together and consolidate into one series the many specifications previously used by various institutional meat buyers.

The Acceptance Service is available to institutional buyers of meat, such as hospitals, steamship lines, and government institutions. Under this service, the buyers use the Institutional Meat Purchase Specifications as the basis for contracts with suppliers. Items offered by the successful bidders to fill the contracts are then examined by Federal meat graders for compliance with the specifications.

AMS officials emphasized that the Institutional Meat Purchase Specifications will *NOT* be distributed through USDA but will be available only from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. Single copies are priced at 15 cents each.

Other specifications in the series include:

- Institutional Meat Purchase Specifications—General Requirements for Use Under USDA Acceptance Service, priced at 5 cents per copy;
- Institutional Meat Purchase Specifications for Fresh Beef—Series 100, priced at 15 cents per copy;
- Institutional Meat Purchase Specifications for Fresh Lamb and Mutton—Series 200, at 5 cents per copy;
- Institutional Meat Purchase Specifications for Fresh Veal and Calf—Series 300, at 5 cents per copy; and
- Institutional Meat Purchase Specifications for Fresh Pork—Series 400, at 5 cents per copy.

Any of the above series may be obtained from the Superintendent of Documents. When any one series is ordered in quantities of 100 or more, the price is discounted by 25 percent.

For further information on the USDA Acceptance Service for meat, contact the Meat Grading Branch, Livestock Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, D. C. 20250.

A Tobacco Market Opens

It looks like a circus. And it would be too—if you substituted a calliope for the auctioneer's rhythmic sing-song, and a big-top for the sun-lighted, raftered roof of the auction warehouse.

The atmosphere is here. From the eager spirit of the waiting throngs to the tiny peanut salesmen shouting "goobers" to an appreciative crowd.

The excitement is here also. Perhaps no better show on earth can be found than the orderly troop of buyers (with their individual signs of bidding), accompanied by the auctioneer with his singing chant, the warehouseman, pace-setter and assorted interested spectators.

This is the opening of a tobacco auction in the Georgia-Florida Belt, the first auction markets to open this year in the flue-cured tobacco area. With these pictures, we'll tell you about it—and try to give you some of the atmosphere of an opening market.



To the spectator, the market officially opens when the auction itself begins. The two long rows of buyers and warehouse representatives following the auctioneer's lead, move past "baskets" of tobacco, examining and bidding at the pace of 400 baskets per hour.



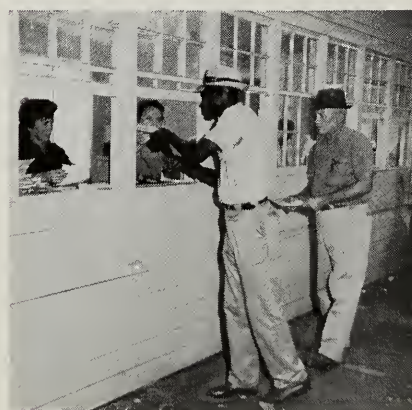
Before the auction starts, however, the tobacco grader of the U.S. Department of Agriculture's Agricultural Marketing Service identifies the lots of tobacco by USDA standard grades, using revised standards which separate "slick" tobacco from mature, grainy leaf.



Producers may discuss the grade of their tobacco with a USDA grader, who is always willing to help. New regulations this year, however, allow only the actual grower to talk to grader during inspection. Others wishing to talk about grades must see supervisor.



Market news reporters gather price information for distribution to the tobacco industry. This valuable marketing intelligence may reach a farmer by radio, television, newspaper or printed report, and helps farmer decide how to sell his leaf.



The farmer's reward comes when he receives the check for his tobacco crop. He deserves his reward—for annually every tobacco farmer has the 13th month of "Tobacuary," in which he places the many extra hours, days, and nights required to produce a quality crop.



AMS officials at the opening to check on the quality of the crop and the adequacy of AMS services for tobacco producers. From left: S.R. Smith, AMS Administrator; Roy Pierce, auction warehouse operator; L. B. Satterfield, Deputy Director, Tobacco Division, AMS.

WHEN potato warehouses in the Red River Valley moved above ground in recent years, large 12-foot-square sliding doors were needed so proper equipment could be used to fill the bins. These doors weigh nearly 1,200 pounds, and the grunting and groaning of a warehouseman trying to close them was often a familiar sound.

To make things a little easier for the warehouseman, marketing researchers in the Transportation and Facilities Research Division of the U.S. Department of Agriculture's Agricultural Marketing Service designed a door which weighs only about 600 pounds, nearly 50 percent lighter than previous types of doors. The secret is plywood nailed to the frame in place of heavier lumber.

The researchers put fiberglass bat insulation inside the panel to keep the cold out. A sheet of polyethylene is stapled inside the panel between the insulation and the side of the door next to the storage area to keep moisture out of the insulation where it could condense and freeze.

The researchers guarantee a tight seal around the door by fastening a rubberized weather strip on the outside of the door where it comes in contact with the casing. Also, they find it easier to keep cold outside the warehouse if the metal plates and bolts on the door are not placed so they make a complete path of metal through the door. This would give the cold a direct path to the potatoes.

The door was designed by AMS agricultural engineers located at the Red River Valley Potato Research Center, East Grand Forks, Minn.

(The author is an agricultural engineer, Transportation and Facilities Research Division, AMS, located at East Grand Forks, Minnesota.)



The secret of the light-weight, AMS-designed potato warehouse door is the plywood sides which have replaced heavier lumber in the previous door. The fiberglass lining, left, keeps cold air away from the potatoes. Right, two exterior views of the sliding door.

november 1963

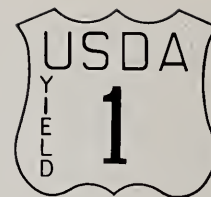
A Lighter Door Eases Strain For Potato Warehousemen

By Earl C. Yaeger





USDA Proposes Change for Beef Grades



SINCE 1927, when a group of livestock producers known as the Better Beef Association asked the U. S. Department of Agriculture to establish a grading service for carcass beef, Federal meat grading has become increasingly important to the livestock and meat industry.

Meat graders of USDA's Agricultural Marketing Service applied the official USDA shield of quality to more than 7.5 billion pounds of beef last year. And all grading was performed at the request of industry—the grading service is completely voluntary and is paid for by the packer or processor who requests it.

A recent USDA-proposed modification of the official grade standards for beef could very well further increase the usefulness of the grading service to both industry and the consumer public as well.

Since the early 1950's, the Livestock Division of USDA's Agricultural Marketing Service has concentrated a great deal of effort toward the development of grade standards which would more realistically reflect the actual retail sales value of carcass beef. For more than ten years, the Livestock Division ex-

plored various ways and means of achieving such standards.

In April 1962, USDA proposed the adoption of a dual grading system for beef (*Agricultural Marketing*, July 1962). Dual grading was designed to provide separate identifications of the two characteristics which most strongly affect retail value of carcasses—eating quality and the yield of salable retail cuts a carcass will produce. Under the proposed dual grading system, conformation was not a part of the determination of quality but was used indirectly in determining yield of retail cuts.

The dual grading system was offered to industry on a one-year trial and optional basis, affording everyone an equal opportunity to evaluate the system under actual operating conditions. USDA asked industry to use dual grading and then comment on the usefulness of the system.

Many of those who took advantage of the opportunity found that the identification of carcass yields was quite useful in their operations. As a matter of fact, some packers used dual grading on their entire beef carcass production, and were successful in establishing price differentials of as much as \$2.00 per

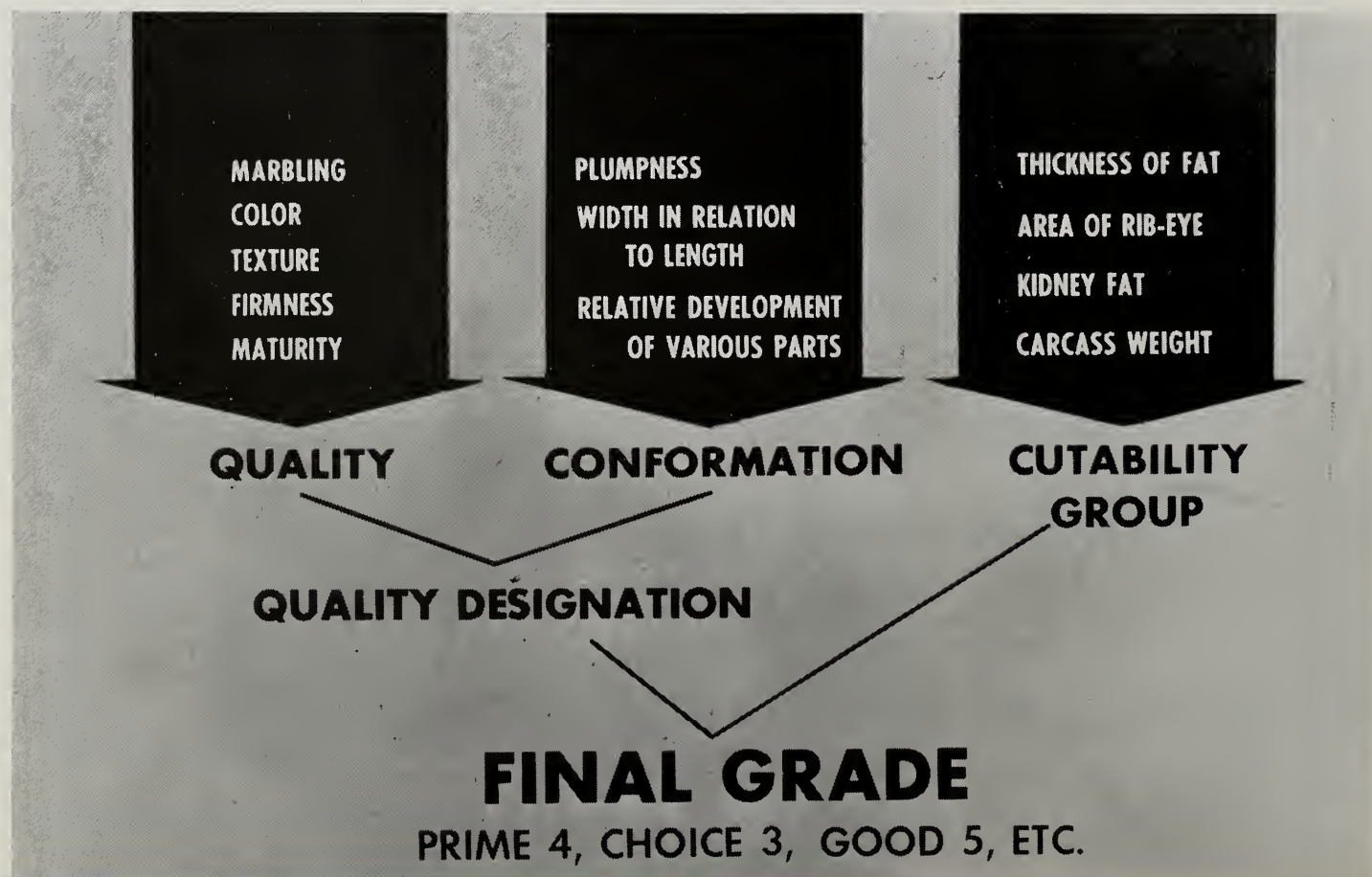
hundredweight between Choice quality carcasses of adjacent yield grades.

Many livestock producers, however, were opposed to omitting carcass conformation as a quality grade factor. Some packers, too, even though they successfully utilized dual grading in their merchandising operations, suggested retaining a conformation evaluation within the quality grade in order to make carcasses more uniformly acceptable to retailers.

After a careful evaluation of all the comments received from all segments of the livestock and meat industry, USDA offered industry a new modification of the grade standards which would retain the traditional grading system in its entirety but add a carcass cutability designation—the most important feature of the previously proposed dual grading system.

Under the new proposal, there would be no change in the evaluation of carcass quality and conformation. Quality would continue to be evaluated on the basis of marbling, color, texture, firmness, and maturity of the lean, and conformation would still be evaluated on the basis of carcass thickness, and the

(continued on page 16)



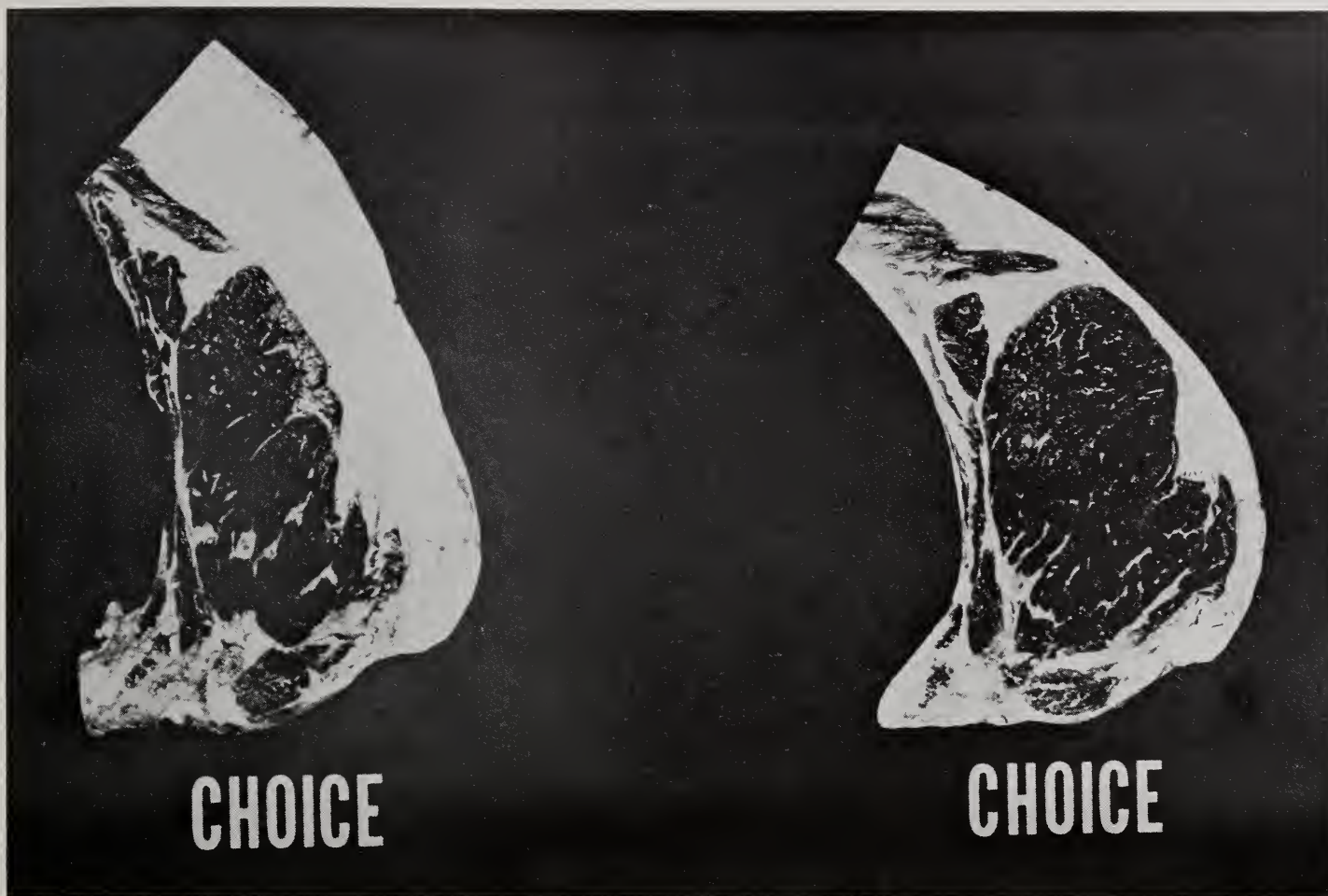


Chart on opposite page shows how the various factors which affect the ultimate retail value of beef carcasses would be combined into quality and cutability designations under USDA's proposed modification. The new feature of the proposal would be inclusion of the cutability designation ranging from 1 to 5, with 1 identifying carcasses of the highest cutout value and 5 identifying those of the lowest. Quality designations would be identified just as they have been under the present official grade standards. Both beef ribs above grade USDA Choice under the pres-

ent official USDA grade standards. The eating quality, or palatability, is the same for both ribs. Under the proposed modification of grade standards, the rib on the left would grade Choice 5 while the rib on the right would grade Choice 2. The numerical cutability designation would provide a realistic identification in the value differences of the two ribs. Obviously, the Choice 2 would be more valuable because it would produce more salable meat with less excess fat. Below, left, Choice 5; right, Choice 2.



Change for Beef Grades

(continued from page 14)

relative development of the various parts of the carcass. Quality and conformation would be combined into single quality groupings such as USDA Prime or Choice, just as they have been under the present official grade standards.

The proposed new feature of the grading system would be the inclusion of a cutability designation as a part of the official USDA grade. The cutability designation would be based on four carcass characteristics: 1) the thickness of the fat covering over the rib eye muscle; 2) the size of the rib eye; 3) the amount of internal carcass fat; and 4) the carcass weight. The proposed cutability designations would range from 1 to 5. The number 1 would identify carcasses of the highest cut out yield and value, and the number 5 would identify those of the lowest.

Under this modification, the long-established quality and conformation standards would be retained, and would take nothing away from those who wish to continue using only the present USDA grades as a basis for trading. The yield designation could simply be ignored. However, the cutability designation would provide a precise estimate of the yield of salable meat from a given carcass and could be used in trading by those who elect to do so.

Application of the proposed standards also would result in a more accurate appraisal of the eating quality of beef carcasses because the procedures used in determining the yield of a carcass require that the carcass be ribbed (separated between ribs exposing the rib eye muscle). This will give the meat grader a better opportunity to accurately evaluate the eating quality characteristics of the lean.

The proposed modification of beef grade standards was published in the Federal Register on September 18. Copies of the proposal may be obtained from the Livestock Division, Agricul-

tural Marketing Service, U. S. Department of Agriculture, Washington, D. C. 20250. Interested persons are invited to submit written comments on the

proposal by April 1, 1964. Comments should be addressed to the Director, Livestock Division, Agricultural Marketing Service, at the above address.



"QUALITY DAIRY FOODS," a new AMS exhibit available for public showing, portrays how dairy products manufacturers, packers and distributors, food processors, and consumers benefit from the dairy inspection and grading service provided by the Dairy Division of USDA's Agricultural Marketing Service. Featured in the exhibit are a large, colorful, illuminated transparency showing a display of appetizing dairy foods—and packages of several dairy products bearing USDA quality and grade shields. It is suited for both dairy trade and consumer audiences. Address inquiries to the Dairy Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C., 20250.